

## NON-PARASITIC CYSTS OF THE SPLEEN.<sup>1</sup>

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OUR knowledge of this subject has a twofold origin: First, the few and comparatively recent clinical reports; and, second, the somewhat more numerous accidental autopsy findings. The results of these two sources of information do not seem to agree, and, as will be seen later, it by no means follows that the two are intimately related, for the discovery, *post-mortem*, of a number of small, latent, cystic formations in a spleen does not seem to necessarily bear on the fact that in certain rare cases patients suffer during life with a formidable hæmatoma which originates in the spleen and demands surgical relief.

Up to 1904 the subject was practically ignored by writers, but that year witnessed the publication of not less than three monographic articles, each written in ignorance of the efforts of the other authors. These articles are by Heinricius (*Arch. f. klin. Chirurgie*, 1904, lxxii, 138); Monnier (*Beiträge z. klin. Chirurgie*, xli), and Laspeyres (*Centralblatt f. d. Grenzgeb. d. Med. u. Chirurgie*, 1904). Heinricius's article is the most comprehensive, as it deals with both clinical and autopsy material. Monnier's paper has to do only with splenectomy cases. Laspeyres devotes a section to the latter in a monographic article on splenectomy in general. The writer presents the subject at this time, first, because he has notes of an unreported personal case, and, second, because, so far as he knows, the matter has not yet received attention in English or American literature. In addition to the author's case, two others are added which seem to have been overlooked by other

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writers, the total being thirty-two. This number by no means represents the frequency of the disease, for Heinrichs cites numerous bare statistics of splenectomies in various clinics which show that this operation has been done a number of times for non-parasitic cysts, although no details are forthcoming. Of the chance autopsy findings collected by the same author, possibly half a dozen were large unilocular hæmatomata which, for some reason, never came to operation. So we may assume that from fifty to sixty of these large cysts have been known to exist; this number might perhaps be increased by correspondence. However, the condition is at best rare, and it may have lost some of its clinical interest from the conclusion reached by authors that it merely represents an indication for splenectomy, an operation the safety of which improves steadily from year to year.



FIG. 1.—Author's case of hæmorrhagic cyst of spleen. Male, 18 years.

In this paper the author will first relate his own case, and then append a brief table of thirty-one other observations, endeavoring to analyze these as they stand.

**AUTHOR'S CASE.**—In September, 1895, Dr. H. M. Ogilbee, of Manitou, Colorado, kindly referred a young man of eighteen years, who presented a large, left-sided, abdominal cyst (Fig. 1). The mass was of four years' growth; there had been gradual

loss of flesh and strength, anorexia, headache, and general pressure symptoms. Fluctuation was plain. The diagnosis of splenic cyst seemed positive. *Operation*.—St. Luke's Hospital. A free incision was made over the prominent part of the tumor, the walls of which were found to be about one-half of an inch thick, semicartilaginous, and solidly adherent to all adjacent structures. Extirpation seemed impossible. (Later autopsy findings confirmed this.) The single cyst held several litres. Posterior incision, through drainage.

The walls of the cyst did not collapse, and the patient died of septic absorption from the cyst wall on the twelfth day. Autopsy with microscopic examination by Dr. H. C. Crouch, Professor of Pathology in the University of Colorado. Anatomical diagnosis, hæmorrhagic cyst of spleen. From the autopsy findings, the author could not see, as said, how the cyst could have been successfully extirpated.

TABLE OF CASES.

No.	Operator. Reference.	Sex. Age.	Clinical History.	Symptoms.	Treatment.	Result.	Character of Cyst.
1	Péan. Des tumeurs de l'abdomen, I, 1880.	F. 7	.....	.....	First recorded operation, 1883. Opening with caustic and injection of iodine.	Death from peritonitis two months later.	Serosanguineous cyst.
2	Péan. (Ibid.)	F. 20	Swelling and pain for two years with recent exacerbation.	Fixed, very painful tumor, fluctuating in places. Diagnosis of ovarian cyst.	Second recorded operation, 1887. Laparotomy followed by recognition of splenic cyst, which, having a pedicle, was readily extirpated after emptying it by puncture and dividing its adhesions.	Recovery. Patient in good health two years later.	Unilocular cyst springing from spleen. Capacity, three litres. Contents, hemorrhagic.
3	Péan. (Ibid.)	F. 54	.....	Diagnosis of abdominal cyst.	Operation, 1879. Opening with caustic followed by incision.	Death in a few days from peritonitis.	Serosanguineous cyst.
4	Marciano and Féral. Progrès Méd., 1874, p. 262.	M. 38	.....	Diagnosis of malaria with abdominal cyst.	Third recorded operation, 1874. Opening with caustic followed by puncture and use of retention-cannula.	Recovery, with persistence of small fistula three months later.	Serosanguineous cyst.
5	Credé. Arch. f. klin. Chirurgie, 1883, xxviii, p. 401.	M. 44	Tumor first noticed one year ago. Enlarged slowly; latterly more rapidly.	Tumor size of child's head, slightly tender, fluctuating. Pedicle to left and above. Covered by omentum and intestines. Diagnosis, hydro-nephrosis or cyst of spleen.	Laparotomy, September 25, 1881. Isolation of tumor and evacuation by puncture. Pedicle very short, spleen adherent. Splenectomy. Pedicle buried, wound closed.	Recovery complete after ten months.	Cyst grew from lower half of spleen; contained 150 cubic centimetres. Yellow fluid, but slightly albuminous.
6	Thornton. Medical-Chirurgical Transactions, 1886, lxx, p. 497.	F. 19	First noticed two years ago.	Movable, fluctuating mass.	Laparotomy, 1884, and recognition of cyst of spleen. Adhesions divided and spleen extirpated.	Recovery.	One large and several smaller cysts, serosanguineous.
7	Spencer Wells. Brit. Med. Jour., 1889, ii, p. 66.	F. 21	Malarial splenomegaly since childhood. Two years ago tumor noted in ovarian region. Subsequent pregnancy (normal), followed by increase in size of tumor and secondary peritonitis.	As suggested by foregoing. Exploratory puncture; evacuation of five litres bloody fluid. Rapid reappearance.	Laparotomy, May 17, 1888. Cyst ruptured, and four or five litres of fluid escaped. Numerous splenic adhesions detached. Resection of cyst wall in part. Drainage.	Recovery. One year later patient well.	.....
8	Fink. Zeitschrift f. Heilkunde, 1890, x, p. 353.	M. 14	Rapidly growing tumor, left upper abdominal region.	Tumor extending from ribs to a hand's-breadth below navel. Nodular, soft, elastic, fluctuating, mobile. Diagnosis of splenic cyst.	Laparotomy, November 10, 1888. Tumor size of child's head, occupying lower half of otherwise normal spleen, resected with thermocautery.	Recovery. Patient well six months later.	Serosanguineous cyst of 1500 cubic centimetres capacity.

TABLE OF CASES.—Continued.

No.	Operator. Reference.	Sex. Age.	Clinical History.	Symptoms.	Treatment.	Result.	Character of Cyst.
9	Bardenheuer. Deutsch. Med. Wochenschrift, 1890, No. 36.	F. 47	.....	Tumor size of child's head, ad- herent to lesser pelvis. Pain in left side of abdomen. Non- digestive disturbances.	Laparotomy and extirpation of splenic cyst.	Recovery.	Cystic contents thin, and of a dirty, chocolate brown color. Cyst walls fibrous.
10	Terrier, Bull. et Mém. Soc. de Chirurgie, 1892, p. 661.	F. 33	First noticed pain in left side, followed by appearance of tumor.	Tumor at level of umbilicus, size of fist, fully movable, with pedicle. Diagnosis cyst of omentum or spleen, proba- bly hydatid.	Laparotomy, November 16, 1891. Recognition of splenic cyst, which was punctured and then extirpated.	Recovery. One year later spleen slight- ly enlarged and tender.	Cyst grew from concav- ity of spleen. Con- tained blood.
11	Schallita, Arch. f. klin. Chirurgie, 1895, xlix, p. 629.	F. 36	Ill for past two years. Tumor noticed five months ago. Pres- sure-symptoms.	Smooth, painless, fluctuating mass, movable below. Ab- sence of hydatid thrill and friction murmur. Diagnosis of hydatid or splenic cyst.	Laparotomy. Extensive adhe- sions of spleen. Extirpation of spleen after examination of eight litres of fluid and divisions of many adhesions.	Recovery com- plete.	Spleen nearly transform- ed into a large sero- sanguineous cyst.
12	Moreschi and Ghetti, Gaz. degli Osped., 1896, No. 119.	F. 42	Direct violence fol- lowed by painful swelling, increasing rapidly in size.	Examined a month after super- vention of symptoms. Diag- nosis of enlarged and float- ing spleen.	Laparotomy, August 14, 1896. Splenectomy after division of adhesions with colon.	Recovery.	Serosanguineous cyst on anterior surface of spleen.
13	Baccelli, Il Poli- clinico, 1897, No. 6.	F. 27	Direct violence. Two months later, tumor noticed in left hypo- chondrium, slowly in- creasing in size.	Smooth, soft, elastic, and fluc- tuating mass, attached to lower border of spleen. Movable, and but little sensi- tive.	Tumor twice punctured, with escape of pure blood. Did not refill.	Recovery. One month later small swell- ing still per- ceptible.	Probably a subcapsular hemorrhage of slow development, which disappeared when an outlet was furnished.
14	Heurtaux, Bull. et Mém. Soc. Chi- rurgie (Paris), 1895, p. 928.	F. 27	One year ago noticed tumor, which steadily increased in size.	Large, fluctuating mass occu- pying three-fourths of ab- dominal cavity.	Laparotomy. Cyst incised and washed out, then marsupial- ized.	Suppuration for a year. Injec- tions of iodo- form, etc. Re- covery after lumbar coun- ter-opening and drainage.	Capacity of cyst, 10 litres; contents bloody, chocolate colored fluid.
15	Baginsky, Berl. klin. Wochen- schrift, 1898, No. 2.	F. 12	Swelling of left side shortly after violent fall.	In left hypochondrium, an elas- tic, fluctuating mass extend- ing across median line. Ex- ploratory puncture, diagnosis of a hemorrhagic cyst of spleen.	Operation, May 3, 1896, by Pro- fessor Glück. Cyst sutured to peritoneum and skin. An elliptical piece excised from cyst wall. Evacuation of two litres of fluid, cyst cavity tamponed.	Recovery (mili- cal cure, in sixteen weeks.	Excised piece of cyst wall showed some nor- mal splenic tissue.
16	Mikhailowsky, XIII Internat. Congrès, Paris, 1900.	..	Malarial splenomegaly. Trauma.	Traumatic blood cyst of spleen.	Splenectomy.	Recovery.	.....

17	Subbotic. Deutsch. Zeitsch. f. Chirurgie, 1900, liv. p. 487.	F. 40	.....	Malarial splenomegaly, peri-splenectomy for splenomegaly, 1897.	Recovery.	Spleen also seat of small multiple cysts, some serous, others hemorrhagic.
18	Subbotic. (Ibid.)	M. 30	.....	Tumor size man's fist beneath left costal arch. Diagnosis, echinococcus or blood cyst of spleen.	Recovery, with small fistula.	Hemorrhagic perisplenic cyst, from subcapsular hemorrhage. Eventual adherence to peritoneum.
19	Subbotic. (Ibid.)	F. 21	.....	Tumor larger than a man's fist beneath left costal arch. Adherent to peritoneum.	Recovery.	Hemorrhagic perisplenic cyst. Correct diagnosis before operation.
20	Subbotic. (Ibid.)	F. 30	.....	Diagnosis of chronic splenomegaly; with lymphatic cyst at hilus of spleen.	Recovery.	Cyst size of hen's egg close to pedicle of spleen; cavity traversed by septa; wall continuous, with splenic capsule.
21	Leonte. Cited by Heinrichius. See No. 20.	F. 55	.....	Tumor in pit of stomach. Diagnosis, cyst of gastrosplenic ligament.	(?)	.....
22	Reimann. "Ueber Milzcysten." Diss. Leipzig, 1901.	M. 33	.....	Spleen enlarged and irregular in form and consistence. Pressure symptoms upward. Trial puncture brought away old hemorrhagic fluid.	No benefit.	Serosanguineous cyst.
23	Roulier. XIV Congrès de Chirurgie, Paris, 1901. p. 157.	F. 24	Tumor first noted nine years ago. Gradually increased in size. One year ago began to grow more rapidly.	Resembled floating spleen until after rapid increase.	Recovery.	Splenic tumor occupied lower half of organ, upper part being normal. Composed of multiple, organized hamatomata.
24	Lelars. XIV Congrès de Chirurgie, Paris, 1901. p. 158.	F. 43	Tumor first noticed about a year before. Previous history of trauma and severe abdominal disturbances extending over months.	Tumor in splenic area tapped from behind and in front, with evacuation of old hemorrhagic fluid. Supervention of symptoms of infection led to intervention.	Recovery.	Probable subcapsular hemorrhage of spleen, with resulting perisplenitis.
25	Dallinger. Medizin. Obsrenja, Ber., 1901.	M. 44	Malaria for a year, with very recent acute exacerbation; confined to bed; collapse.	High temperature. Increased splenic dullness.	Recovery.	Subcapsular hemorrhage of spleen; capsular adhesions. Splenic tissues softened. Blood, partly liquid and partly clotted, was present in the cyst.

TABLE OF CASES.—*Concluded.*

No.	Operator. Reference.	Sex. Age.	Clinical History.	Symptoms.	Treatment.	Result.	Character of Cyst.
26	Chavrier. Bulletin Méd., 1902, xvi, p. 24.	M. ..	Many years before had a hurt over spleen. Subsequent digestive distur- bances. Recent acute exacerbation, violent pain, tympanites.	Diagnosis of intestinal occlu- sion.	No operation.	Death in two days.	Autopsy showed tumor of spleen, non-adhe- rent. Represented a subcapsular hemato- ma with consecutive atrophy of spleen. Tu- mor much larger than spleen. Death from rupture of stomach. Blood cyst of spleen.
27	Jordan. Centralb. d. Chirurgie, 1903, No. 36.	F. 46	.....	.....	Splenectomy, 1899.	Recovery.	.....
28	Monnier. Beitrage z. klin. Chirurgie, xii, 1903-4, p. 181.	F. 21	Recently, with good previous history, local and general symptoms and begin- ning tumor in left hypocondrium.	Bulging in left hypocondrium. Tumor moved on respiration. With rough friction-murmur. Appeared to be a cyst; not tender, and some movable.	Operation, June 12, 1903, by Professor Krülein. Cyst of upper part of spleen, adhe- rent to surrounding tissues. Incision brought away bloody fluid. Splenectomy after division of adhesions. Operation March 21, 1900.	Recovery.	Capacity of cyst, three and a half litres.
29	Heinricius. Arch. f. Klin. Chirurgie, p. 138, 1904, lxxii, p. 138.	F. 14	Tumor noted shortly before operation. General health good.	Mass reached nearly to nubes. Smooth, tense, freely mov- able. Uterus and ovaries nor- mal.	Spleen found displaced, de- scribed, and twisted on pedicle, with tumor growing from outer portion. Splenectomy.	Recovery. Pa- tient well three years later.	Splenic tumor, cystic; capacity, 800 cubic centimetres; size of child's head; contents hem- orrhagic. Grew from outer lower portion. Unilocular cyst.
30	Powers.	M. 18	Tumor had been grow- ing for four years.	General failure of health; pres- sure symptoms.	Operation, September, 1895. Incision. Tumor universally adherent. Freely opened, evacuated, and drained. Walls were thick and semi- cartilaginous, and did not collapse.	Death on twelfth day, from sepsis due to absorp- tion from cyst wall.	.....
31	Leconte. XIV Con- grès Chirurgie, Paris, 1901.	F. ..	.....	.....	Both cases operated on by mar- supialization.	Both recovered.	Both unilocular, sero- sanguineous cysts of spleen; capacity, 1400- 2000 cubic centimetres.
32		F. ..	.....	.....			

## BRIEF ANALYSIS OF THIRTY-TWO TABULATED CASES.

*Etiology.*—These thirty-two cases represent the known clinical material which has been under observation during life. In all but one (Michailowsky) the sex is given, viz., male 8, female 23. In twenty-one female cases the ages are given; and we learn that the very great majority (eighteen) occurred during the menstrual years; at least sixteen in the childbearing period. Making due allowance for the influence of injuries and diseases of the spleen, and for the fact that in some instances the cysts were a long time in developing, there seems no reason to doubt that these occur often enough in women during the reproductive cycle to give the affection a gynæcological bias. If we study the cases discovered in chance autopsies, the data, while scanty, do not appear to show this; so that we are perhaps justified in regarding menstruation and parturition as merely aggravating causes. In a few instances the cyst became much enlarged by childbirth, and perhaps full particulars of the history—which details are often wanting—would increase the number.

Aside from the teachings furnished by sex and age the meagreness of many case-histories renders further data as to causation of limited significance. Traumatism and antecedent disease of the spleen (specially malarial enlargement) undoubtedly act as contributory causes in not a few cases; in as many others, however, such factors are wanting. Whatever the original cause, we often find recorded an acute exacerbation which brings the patient under medical observation. Aside from childbirth, we know nothing of the causes of such exacerbations.

*Symptoms.*—After the cases came under medical observation, the cystic character of the tumor seems to have been generally recognized, although in a few cases the diagnosis—rightfully or wrongfully made—of an enlarged or floating spleen is recorded.

*Diagnosis.*—The precise diagnosis, both as to origin and character of the cyst, was seldom made, although in some cases



it was recorded as a possibility; that is, it was noted as one member of an alternative.

*Treatment.*—When we come to treatment, we find that of the thirty-two cases one died of intercurrent rupture of the stomach before operation could take place (Chavier). In two of Subbotic's cases the spleen was really removed for chronic hypertrophy, and the discovery of complicating cystic formations was simply accidental. Finally, in one of Leonte's cases (No. 21), not accessible at first hand, the reviewer (Heinricius) omits to state the result of the operation (splenectomy), although we have every reason to believe that it was successful. This leaves twenty-eight cases for consideration. Analyzing these, we find that the patients have been treated as follows: simple puncture, 3; incision and injection, 2; incision and drainage, 5; marsupialization, 3; extirpation of cyst, 5; extirpation of spleen, 10.

*Puncture.*—Of the three cases (4, 13, 22) of puncture (Marcano and Féréol, Baccelli, Reimann), in the first of which a retention-cannula was used, two patients made a relative recovery. In one a fistula remained, and in another complete resolution did not occur. The third was merely a case of palliative tapping, and no improvement resulted.

*Incision (and Injection).*—The two cases (1, 3) thus treated were among the earliest recorded (Pean). Both patients died of peritonitis; the first after a course of iodine injections, the second soon after incision, probably anticipating injection treatment.

*Incision and Drainage.*—(This method includes tamponade.) Of five cases (15, 18, 19, 24, 30) thus treated, three made complete recovery, and a fourth a relative recovery (persistence of small fistula). The fifth patient (author's case) died of sepsis.

*Marsupialization.*—Three cases (14, 31, 32) treated in this manner made good recoveries.

*Resection of Cyst.*—This operation was performed five times (Cases 2, 7, 8, 9, 10), and varied with the nature of the cyst. If a pedicle was present, the latter was readily tied

off, otherwise the extirpation was effected as thoroughly as practicable. It is worthy of note that all of these operations were done at an early date (none subsequent to 1892). Four patients made complete recovery. The fifth, Terrier's case, made a relative recovery, the spleen being slightly enlarged and tender a year after operation.

*Splenectomy.*—There were ten cases (5, 6, 11, 12, 16, 23, 25, 27, 28, 29) of this operation (we do not include two cases of splenectomy by Subbotin in which the operation was really done for chronic enlargement), and all recovered.

A comparison of these methods appears to show that puncture, incision, and drainage, and resection of the cyst proper, while able to secure permanent recovery in selected cases, are nevertheless untrustworthy, each having failed (in a part of a small series of cases) to produce cure, while several fatalities have resulted. Although marsupialization has a clean record in a small number of cases, it is manifestly restricted to those in which the integrity of the spleen is not compromised. On the other hand, splenectomy appears to be the only operation of general applicability, and to be a necessity whenever the spleen is extensively affected, either by pre-existing disease, or by displacement, or by atrophy due to the compression of large cysts, etc. We must bear in mind that the conservative operations are, as a rule, of relatively earlier date than the radical, and were employed largely in the thought that total ablation was fraught with great danger to the system at large. Those who first removed the spleen for this condition seem to have been very anxious as to the state of the blood count, thyroid, and bone-marrow.

*Pathology and Nature.*—Not very much is to be learned from an analysis of the clinical material as to the actual nature of these cysts, most of the speculation as to the origin and development of the formations being based upon autopsy cases in which the cysts are small and latent. As has been observed, it is a long distance from the latter findings to cysts of surgical importance; and it is difficult to show a direct transition from the one to the other. Indeed, they may represent two

entirely independent conditions. The autopsy cyst is of common occurrence; one pathologist may encounter many cases in a lifetime. The clinically important cyst, on the contrary, is very rare, and few surgeons encounter more than one or two in an entire experience.

Clinical observation, however, teaches us these truths,—nearly all of the cysts which come to treatment are large and unilocular, and of the serosanguineous type. They contain from one to ten litres of fresh or old blood, and the greater the age of the cyst the greater the secondary alterations resulting from absorption of the fluid portion, decomposition of coloring matter, and persistence of organized fibrin, cholesterin, mineral matter, etc. The walls of the cyst consist of a varying proportion of splenic and fibrous tissue with corresponding variations in the thickness.

Without going into speculation based upon histological studies of small cysts found accidentally at autopsy, it seems safe to say that the typical cyst of the spleen, from the purely surgical stand-point, originates in a subcapsular hæmorrhage of whatsoever origin. This is especially true of the cases reported during the last ten or twelve years. We find a consensus of data which shows that the slight, continuous escape of blood beneath the capsule—never severe enough to present symptoms of internal hæmorrhage—causes a hæmatoma; and that the peritoneal capsule undergoes a low form of inflammation which almost invariably results in adhesion to the outlying tissues. If the tumor is of sufficient size, pressure symptoms result which may affect the thorax or abdomen, according to locality. If the peritoneal reaction is sufficiently intense, pain, vomiting, etc., may come on. If the pressure is exerted upon the spleen itself, the organ undergoes atrophy in time.

But although this seems to be the predominant form of splenic cyst, and one which is very sharply characterized, it by no means represents all the possibilities of the lesion. There are other cases in which the hæmorrhage cannot be regarded as subcapsular, but must be thought parenchymatous. The former has a free field in burrowing between the spleen and its

capsule, in accumulating in large amounts, and in causing perisplenic adhesions and pressure symptoms. The latter is deeper seated, smaller, and more localized, originating probably from rupture of a splenic blood-vessel. Its walls are composed originally of normal splenic tissue, which in time becomes transformed in part into simple fibrous tissue. While it tends to come to the surface of the spleen, the pressure symptoms and the peritoneal adhesions are much less in evidence. The difference between the two types is essentially one of degree. The contents of these cysts are the same, and under certain circumstances the two may produce in time the same clinical picture. Generally speaking, however, the parenchymatous variety is more strictly isolated, and is localized in a particular region of the spleen, the remainder of the organ being intact. It has even happened that these cysts have formed pedicles or have developed sessile attachments to a spleen otherwise normal. Hence it is not surprising, bearing in mind the former fear of extirpating the entire spleen, that the earlier operators employed conservative measures in dealing with these cysts, especially when they were clearly circumscribed. Nor can we, even at this time, deny that such sharply localized cysts are best treated conservatively in selected cases, especially when the cyst is pedunculated.

Non-hæmorrhagic cysts are of such rare occurrence clinically that they may be left out of consideration.

Some of the more recent writers, in view of the frequent complication of perisplenitis, are calling attention to the diagnostic value of a perisplenic friction sound, which is synchronous with respiration. Such diagnostic evidence, while obtainable in certain cases, seems to the writer of doubtful value.

Heinricius states that the hæmatoma is readily distinguished from all other cysts as to origin and nature. It must be due either to rupture of a healthy vessel by trauma, or of a diseased vessel either spontaneous or traumatic. Probably as a result of the study of autopsy material, he adds that such ruptures may occur in connection with tumor formation (doubtless meaning angiomata). These blood cysts differ in

no wise from hæmatomata in other localities. Heinricius appears to have overlooked the fact that the typical hæmatoma is subperitoneal or subcapsular, with an almost inevitable tendency to cause adhesions; at least, he speaks of the process as though it were essentially intrasplenic.

In regard to the evolution and symptoms of large cysts, Heinricius states that they most often grow in the direction of least resistance, *i.e.*, downward and forward; yet he admits that in some cases the pressure is exerted towards the diaphragm. The relation of the growing cyst to the surrounding viscera and to local and general symptoms is not explained. Generally speaking, the tumor is of irregular contour, fluctuating in places, and rather insensitive. The rate of growth may be very variable. His statement that the cysts may rupture or suppurate does not seem to be borne out by facts.

Diagnosis must, as a rule, be made by exclusion alone. In addition to sources of confusion already cited, pleural effusion, cyst of the right lobe of the liver, and abscess of the abdominal wall may be added.

The patient's account of his own case possesses considerable value. Exploratory puncture can throw but little light on the origin of the tumor.

The operation almost invariably indicated is splenectomy, which is only contraindicated by extensive adhesions and extreme cachexia. Extirpation of the cyst is practicable only when a pedicle is present. Other interventions are condemned. They are essentially palliative and, moreover, dangerous.

Monnier explains the predominance of female patients in the reproductive cycle by the fact that the spleen becomes hyperæmic and relaxes during menstruation, pregnancy, and menopause. He thinks small latent cysts may become hæmorrhagic, but admits that no one has demonstrated a connecting link between them and the large hæmatomata. The blood count is of no value in diagnosis, since it undergoes no change. He is inclined to believe that the perisplenic friction sound has a limited diagnostic value, even if it only serves to exclude the possibility of extraperitoneal tumors.